

Exhibit E



UNITED STATES
PATENT AND TRADEMARK OFFICE

Assignment abstract of title for Application 13134028

Invention title/Inventor	Patent	Publication	Application	PCT	International registration
DEVICE-ASSISTED SERVICES FOR PROTECTING NETWORK CAPACITY Gregory G. Raleigh, Alireza Raissinia, James Lavine	8589541 Nov 19, 2013	20120324091 Dec 20, 2012	13134028 May 25, 2011		

Assignments (2 total)

Assignment 2

Reel/frame	Execution date	Date recorded	Properties	Pages
041248/0681	Dec 29, 2016	Jan 4, 2017	56	6
Conveyance				
MERGER AND CHANGE OF NAME (SEE DOCUMENT FOR DETAILS).				
Assignors HEADWATER PARTNERS I LLC HEADWATER MANAGEMENT LLC		Correspondent ANN TAYLOR 1011 PRUITT PLACE TYLER, TX 75703		

Assignee

HEADWATER RESEARCH LLC
1011 PRUITT PLACE
TYLER, TEXAS 75703

Assignment 1

Reel/frame	Execution date	Date recorded	Properties	Pages
026771/0395	Aug 16, 2011	Aug 18, 2011	1	3
Conveyance				
ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).				
Assignors RALEIGH, GREGORY G. RAISSINIA, ALIREZA LAVINE, JAMES		Correspondent SHEPPARD, MULLIN, RICHTER & HAMPTON LLP 390 LYTTON AVENUE PALO ALTO, CA 94301-1432		

Assignee

HEADWATER PARTNERS I, LLC
350 MARINE PARKWAY, SUITE 300
REDWOOD CITY, CALIFORNIA 94065

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Gregory G. Raleigh</td><td>08/16/2011</td></tr><tr><td>Alireza Raissinia</td><td>08/16/2011</td></tr><tr><td>James Lavine</td><td>08/16/2011</td></tr></tbody></table>		Name	Execution Date	Gregory G. Raleigh	08/16/2011	Alireza Raissinia	08/16/2011	James Lavine	08/16/2011		
Name	Execution Date										
Gregory G. Raleigh	08/16/2011										
Alireza Raissinia	08/16/2011										
James Lavine	08/16/2011										
RECEIVING PARTY DATA											
<table border="1"><tr><td>Name:</td><td>Headwater Partners I, LLC</td></tr><tr><td>Street Address:</td><td>350 Marine Parkway, Suite 300</td></tr><tr><td>City:</td><td>Redwood City</td></tr><tr><td>State/Country:</td><td>CALIFORNIA</td></tr><tr><td>Postal Code:</td><td>94065</td></tr></table>		Name:	Headwater Partners I, LLC	Street Address:	350 Marine Parkway, Suite 300	City:	Redwood City	State/Country:	CALIFORNIA	Postal Code:	94065
Name:	Headwater Partners I, LLC										
Street Address:	350 Marine Parkway, Suite 300										
City:	Redwood City										
State/Country:	CALIFORNIA										
Postal Code:	94065										
PROPERTY NUMBERS Total: 1											
<table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Application Number:</td><td>13134028</td></tr></tbody></table>		Property Type	Number	Application Number:	13134028						
Property Type	Number										
Application Number:	13134028										
CORRESPONDENCE DATA											
<p>Fax Number: (650)815-2601 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p>											
<p>Phone: (650) 815-2600 Email: svpatents@sheppardmullin.com Correspondent Name: Sheppard, Mullin, Richter & Hampton LLP Address Line 1: 390 Lytton Avenue Address Line 4: Palo Alto, CALIFORNIA 94301-1432</p>											
ATTORNEY DOCKET NUMBER: 26WV-160509 [RALEP032]											
NAME OF SUBMITTER: Marc A. Sockol											
<p>Total Attachments: 2 source=160509 - RALEP032 - Assignment - Signed#page1.tif source=160509 - RALEP032 - Assignment - Signed#page2.tif</p>											

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PATENT
REEL: 026771 FRAME: 0395

ASSIGNMENT

(1-8) *Insert Name(s) of Inventor(s)* (1) Gregory G. Raleigh (2) Alireza Raissinia
(3) James Levine

For good and valuable consideration receipt of which is hereby acknowledged, the undersigned agree(s) to assign, and hereby do(es) assign, transfer and set over to:

(9) *Insert name of Assignee* (9) Headwater Partners I, LLC
(10) *Insert state of incorporation of Assignee* (10) State of Delaware
(11) *Insert address of Assignee* (11) of 350 Marine Parkway, Suite 300, Redwood City, California, 94063, U.S.A.
(hereinafter designated as the Assignee) the entire worldwide right, title, interest, and patent applications and patents for every country, including divisions, reissues, continuations and all other extensions, rights and priorities in the invention known as and subject matter contained in
(12) *Insert Identification of Invention, such as Title, Case Number or Foreign Application Number* (12) Device-Assisted Services for Protecting Network Capacity (Case No. 26WV-160509 [RALEP032], Serial No. 13/134,028) for which the undersigned have filed an application for patent in United States of America
(13) *Insert Date of Filing of Application* (13) on May 25, 2011

- 1) The undersigned agree(s) to execute all papers necessary in connection with the application and any continuing or division applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.
- 2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.
- 3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.
- 4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.
- 5) The undersigned hereby authorize(s) and request(s) the Commissioner for Patents and the duly constituted authorities of foreign countries to issue any and all Letters Patents resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, its successors and assigns, as Assignee of the entire right, title and interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

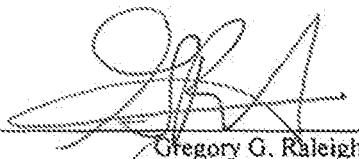
Attorney Docket No. 26WV-160509 [RALEP032]

6) The undersigned hereby grant(s)

Marc A. Sockel, Reg. No. 40,823; Shaalu Mehra, Reg. No. 44,934; Daniel C. Kloke, Reg. No. 58,417; William F. Ahmann, Reg. No. 52,548; Mukund H. Sharma, Reg. No. 64,692; and all attorneys and agents associated with Customer No. 69849.

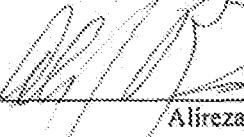
the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

Date 8/16/2011



Gregory G. Raleigh

Date 8-16-2011



Alireza Raissinia

Date 8/16/11



James Lavine

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4210269

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	MERGER AND CHANGE OF NAME
EFFECTIVE DATE:	12/29/2016

CONVEYING PARTY DATA

Name	Execution Date
HEADWATER PARTNERS I LLC	12/29/2016

NEWLY MERGED ENTITY DATA

Name	Execution Date
HEADWATER MANAGEMENT LLC	12/29/2016

MERGED ENTITY'S NEW NAME (RECEIVING PARTY)

Name:	HEADWATER RESEARCH LLC
Street Address:	1011 PRUITT PLACE
City:	TYLER
State/Country:	TEXAS
Postal Code:	75703

PROPERTY NUMBERS Total: 56

Property Type	Number
Patent Number:	8023425
Patent Number:	8250207
Patent Number:	8275830
Patent Number:	8321526
Patent Number:	8326958
Patent Number:	8331901
Patent Number:	8340634
Patent Number:	8346225
Patent Number:	8351898
Patent Number:	8355337
Patent Number:	8385916
Patent Number:	8391834
Patent Number:	8396458
Patent Number:	8402111
Patent Number:	8406733

PATENT

REEL: 041248 FRAME: 0681

504163592

Property Type	Number
Patent Number:	8406748
Patent Number:	8437271
Patent Number:	8441989
Patent Number:	8467312
Patent Number:	8478667
Patent Number:	8516552
Patent Number:	8527630
Patent Number:	8531986
Patent Number:	8548428
Patent Number:	8570908
Patent Number:	8583781
Patent Number:	8588110
Patent Number:	8589541
Patent Number:	8606911
Patent Number:	8626115
Patent Number:	8630192
Patent Number:	8630611
Patent Number:	8630617
Patent Number:	8630630
Patent Number:	8631102
Patent Number:	8634805
Patent Number:	8635335
Patent Number:	8635678
Patent Number:	8639811
Patent Number:	8639935
Patent Number:	8640198
Patent Number:	8666364
Patent Number:	8667571
Patent Number:	8688099
Patent Number:	8695073
Patent Number:	8713630
Patent Number:	8724554
Patent Number:	8725123
Patent Number:	8737957
Patent Number:	8745191
Patent Number:	8745220
Patent Number:	8788661
Patent Number:	8793758

Property Type	Number
Patent Number:	8797908
Patent Number:	8799451
Patent Number:	8832777

CORRESPONDENCE DATA**Fax Number:**

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 903-201-6211

Email: patent@headwaterllc.com

Correspondent Name: ANN TAYLOR

Address Line 1: 1011 PRUITT PLACE

Address Line 4: TYLER, TEXAS 75703

NAME OF SUBMITTER:	ANN TAYLOR
SIGNATURE:	/Ann Taylor/
DATE SIGNED:	01/04/2017

NAME OF SUBMITTER: ANN TAYLOR

SIGNATURE: /Ann Taylor/

DATE SIGNED: 01/04/2017

Total Attachments: 3

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Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"HEADWATER PARTNERS I LLC", A DELAWARE LIMITED LIABILITY COMPANY,

WITH AND INTO "HEADWATER MANAGEMENT LLC" UNDER THE NAME OF "HEADWATER RESEARCH LLC", A LIMITED LIABILITY COMPANY ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE ON THE TWENTY-NINTH DAY OF DECEMBER, A.D. 2016, AT 3:02 O'CLOCK P.M.

4966025 8100M
SR# 20167326785



You may verify this certificate online at corp.delaware.gov/authver.shtml



A handwritten signature of Jeffrey W. Bullock in black ink, followed by a horizontal line and the text "Jeffrey W. Bullock, Secretary of State".

Authentication: 203606635
Date: 12-29-16

PATENT
REEL: 041248 FRAME: 0684

State of Delaware
Secretary of State
Division of Corporations
Delivered 03:02 PM 12/29/2016
FILED 03:02 PM 12/29/2016
SR 20167326785 - File Number 4966025

CERTIFICATE OF MERGER

MERGING

**HEADWATER PARTNERS I LLC
A DELAWARE LIMITED LIABILITY COMPANY**

WITH AND INTO

**HEADWATER MANAGEMENT LLC
A DELAWARE LIMITED LIABILITY COMPANY**

Pursuant to Section 18-209 of the Delaware Limited Liability Company Act

Headwater Management LLC, a Delaware limited liability company (the “**LLC**”), does hereby certify as follows:

FIRST: The LLC is a limited liability company duly formed and existing under the laws of the State of Delaware and Headwater Partners I LLC (the “**Company**”) is a limited liability company duly formed and existing under the laws of the State of Delaware.

SECOND: The Agreement and Plan of Merger (the “**Merger Agreement**”), dated as of December 29, 2016, by and among the Company and the LLC, setting forth the terms and conditions of the merger of the Company with and into the LLC (the “**Merger**”), has been approved, adopted, certified, executed and acknowledged by the LLC and the Company in accordance with Section 18-209 of the Delaware Limited Liability Company Act.

THIRD: The LLC shall be the surviving entity of the Merger (the “**Surviving LLC**”) and the name of the Surviving LLC shall be changed to “Headwater Research LLC”.

FOURTH: The executed Merger Agreement is on file at the principal place of business and office of the Surviving LLC at the following address: 1011 Pruitt Place, Tyler, Texas 75703.

FIFTH: A copy of the Merger Agreement will be furnished by the Surviving LLC, on request and without cost, to any member of the Company or the LLC.

SIXTH: The Merger shall be effective upon the filing of this Certificate of Merger with the Secretary of State of the State of Delaware.

* * *

IN WITNESS WHEREOF, Headwater Management LLC has caused this Certificate of Merger to be executed by an authorized person on December 29, 2016.

HEADWATER MANAGEMENT LLC

By: /s/ Greg Raleigh

Name: Greg Raleigh

Title: Manager

[*Signature Page to Certificate of Merger*]